

عنوان مقاله:

Chemical composition and evaluation of antibacterial activity of fennel (*Foeniculum vulgare* Mill) seed essential oil against some pathogenic bacterial strains

محل انتشار:

مجله علوم زیستی خاورمیانه، دوره 18، شماره 4 (سال: 1399)

تعداد صفحات اصل مقاله: 13

نویسندگان:

Maryam Barrahi - Laboratory of Agro-physiology, Biotechnology, Environment and Quality, Department of Biology; Faculty of Sciences, Ibn Tofail University BP ۱۳۳, ۱۴۰۰۰ Kenitra, Morocco

Abir Esmail - Laboratory of Agro-physiology, Biotechnology, Environment and Quality, Department of Biology; Faculty of Sciences, Ibn Tofail University BP ۱۳۳, ۱۴۰۰۰ Kenitra, Morocco

Hajar Elhartiti - Laboratory of Agro-physiology, Biotechnology, Environment and Quality, Department of Biology; Faculty of Sciences, Ibn Tofail University BP ۱۳۳, ۱۴۰۰۰ Kenitra, Morocco

Nabileh Chahboun - Laboratory of Agro-physiology, Biotechnology, Environment and Quality, Department of Biology; Faculty of Sciences, Ibn Tofail University BP ۱۳۳, ۱۴۰۰۰ Kenitra, Morocco

Avatef Benali - Laboratory of Agro-physiology, Biotechnology, Environment and Quality, Department of Biology; Faculty of Sciences, Ibn Tofail University BP ۱۳۳, ۱۴۰۰۰ Kenitra, Morocco

Raja Amiyare - Laboratory of Agro-physiology, Biotechnology, Environment and Quality, Department of Biology; Faculty of Sciences, Ibn Tofail University BP ۱۳۳, ۱۴۰۰۰ Kenitra, Morocco

Boshra Lakhri - Laboratory of Agro-physiology, Biotechnology, Environment and Quality, Department of Biology; Faculty of Sciences, Ibn Tofail University BP ۱۳۳, ۱۴۰۰۰ Kenitra, Morocco

Noraldin Rhaïem - Laboratory of Agro-physiology, Biotechnology, Environment and Quality, Department of Biology; Faculty of Sciences, Ibn Tofail University BP ۱۳۳, ۱۴۰۰۰ Kenitra, Morocco

Abodolghader Zarrouk - Laboratory of Materials, Nanotechnology and Environment, Faculty of Sciences, Mohammed V University, Av. Ibn Battouta, P.O. Box ۱۰۱۴ Agdal-Rabat, Morocco

Mohamad Ouhsine - Laboratory of Agro-physiology, Biotechnology, Environment and Quality, Department of Biology; Faculty of Sciences, Ibn Tofail University BP ۱۳۳, ۱۴۰۰۰ Kenitra, Morocco

خلاصه مقاله:

The aim of this work is to assess the in vitro antibacterial activity of the extracted essential oil (EO) obtained from dry seeds of fennel, *Foeniculum vulgare* Mill, collected from Meknes, (Morocco), against seven pathogenic bacteria: *Escherichia coli*, *Klebsiella pneumoniae*, *Enterobacter cloacae*, *Pseudomonas aeruginosa*, *Acinetobacter baumannii*, *Staphylococcus epidermidis* and *Staphylococcus aureus*. The extraction of EO from fennel was performed by hydro-

distillation in the Clevenger-type device. The yield was close to ۲.۸۲%. The identification of the chemical composition of fennel EO by gas chromatography coupled with mass spectrometry (GC/MS), has given ۲۵ constituents. They represent ۹۷.۵۲۵% of all constituents existing in the essential oil. The major compound was the trans-anethole (with ۴۴.۳۷۶%). The result of this study showed that the fennel EO has a remarkable inhibitory activity against the majority of the examined microorganisms, especially against *A. baumannii*, with the exception of *P. aeruginosa* and *E. coli*, as compared to three standard antibiotics. It also exhibited a strong antimicrobial activity against *A. baumannii* (with a growth inhibition zone of ۲۶ mm) compared to the standard antibiotics examined, with minimum inhibitory concentration (MIC) of ۱/۲۰۰۰ (v/v) and *S. aureus* (growth inhibition zone of ۲۰ mm) with MIC of ۱/۱۰۰۰۰ (v/v). These results indicate that the fennel OE examined represents a potential source of natural antibacterial substances which can be used against pathogenic strains

کلمات کلیدی:

*Foeniculum vulgare* Mill, Essential oil, Chemical composition, Inhibitory activity, MIC

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/2004775>

